CLAIM AMENDMENTS

1. (Currently Amended) A method of diagnosing the presence of pathology in a biological sample, comprising the steps of:

identifying a region in the biological sample containing an extracellular material;

obtaining infrared absorbance spectral data from the region containing the extracellular material; and

determining, from the infrared absorbance spectral data, whether an infrared spectral marker is found in the region containing the extracellular material, wherein finding the infrared spectral marker is indicative of presence of pathology in the biological sample, and wherein the infrared spectral marker is a relatively flat baseline of an infrared band at about 1280 cm^{-1}.

2. (Canceled). A method as in claim 1, wherein the infrared spectral marker is a relative flat baseline of an infrared band at about 1280 cm^{-1}.

3. (Original) a method as in claim 2, wherein the extracellular material is connective tissue.

4. (Original) A method as in claim 1, wherein the pathology to be diagnosed is carcinoma.

5. (Original) A method as in claim 1, wherein the biological sample is a breast biopsy sample, and wherein the pathology to be diagnosed is breast cancer.

6. (Currently Amended) A method of diagnosing the presence of pathology in a biological sample ~~as in claim 2~~, comprising the steps of:

identifying a region in the biological sample containing an extracellular material;

obtaining infrared absorbance spectral data from the region containing the extracellular material; and

determining, from the infrared absorbance spectral data, whether an infrared spectral marker is found in the region containing the extracellular material, wherein finding the infrared spectral marker is indicative of presence of pathology in the biological sample, wherein the infrared spectral marker is a relatively flat baseline of an infrared band at about 1280 cm^{-1}, and

wherein the ~~step of~~ determining includes calculating a slope of the baseline of the infrared absorbance spectral band at about 1280 cm^{-1} from infrared absorbance spectral intensities of a first baseline point wavenumber adjacent and greater than 1280 cm^{-1} and a second baseline point wavenumber adjacent and smaller than 1280 cm^{-1}.

7. (Original) A method as in claim 6, wherein the step of obtaining infrared absorbance spectral data includes measuring the infrared absorbance spectral intensities at the first and second baseline point wavenumbers from the region containing the extracellular material.

8. (Original) A method as in claim 7, wherein the step of measuring the infrared absorbance spectral intensities includes detecting an infrared image of the biological sample at the first baseline point wavenumber and detecting an infrared image of the biological sample at the second baseline point wavenumber.

9. (Original) A method as in claim 8, wherein the steps of detecting the infrared images use a focal plane array detector having multiple pixels to detect infrared light from the biological sample.

10. (Original) A method as in claim 8, wherein the step of determining whether the infrared spectral marker is found includes subtracting the infrared image at the second baseline point wavenumber from the infrared image at the first baseline point wavenumber to generate a difference image.

11. (Original) A method as in claim 10, further including the step of presenting the difference image for viewing.

12. (Original) A method as in claim 8, wherein the steps of detecting the infrared images include illuminating the biological sample with narrow bands of infrared light at the first and second baseline point wavenumbers, respectively, through the use of narrow bandwidth infrared filters.

13. (Original) A method as in claim 6, wherein the step of calculating the slope of the baseline of the infrared absorbance spectral band at about 1280 cm^{-1} including deriving an intensity difference between infrared absorbance spectral intensities at the first and second baseline point wavenumbers and scaling the intensity difference with a corrected peak intensity of an infrared absorbance peak associated with the extracellular material.

14. (Original) A method as in claim 13, wherein the infrared absorbance peak associated with the extracellular material is at a wavenumber of about 1340 cm^{-1}.

15. (Original) A method as in claim 14, including the step of calculating the corrected peak intensity from a measured peak intensity of the infrared absorbance peak and measured baseline intensities of the infrared absorbance peak.

16. (Original) A method as in claim 6, wherein the first and second baseline point wavenumbers are about 1303 cm^{-1} and 1264 cm^{-1}, respectively.

Claims 17 – 27 (Canceled).